Preliminary results of a catastrophic model of extreme wind gust situations in peninsular Spain

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Abstract
The CCS (Spanish Insurance Compensation Consortium) is the Spanish Agency that provides insurance coverage against weather events that involve an extraordinary risk. One of the extraordinary risks covered by the CCS refers to extraordinary wind, defined as those with wind gusts exceeding 120 km/h. The accurate delimitation of the areas in which this condition is met shows considerable difficulties in our country because of the lack of wind observations and the complexity of the terrain.
The operational procedure performed at AEMET (Spanish Meteorological Agency) for estimating the areas with maximum wind gusts applies a geostatistical technique, the universal kriging, based on the observational data of maximum wind gust and drawing also on external variables: terrain elevation, distance from the shore, and the HIRLAM (High Resolution Limited Area Model) forecasting model output of maximum wind gust field.
Extreme meteorological events sometimes go unnoticed but frequently become apparent due their impact on society with its corresponding consequences. Moreover, the catastrophic nature of a phenomenon depends not only on the extreme value that the climate element takes on, but also on other factors, such as population distribution or geomorphological features, among many others. In this work we present some preliminary steps in the development of a catastrophic model of extreme wind gust situations in peninsular Spain. The main aim of this model is to provide significant information for covering risk against future extreme wind situations, as well as assessing the liability owing to this risk on a year time-frame. The first steps in the development of this model are: a) the generation of climatology of the areas under extraordinary wind going back to 2010 and, b) the estimation of incurred covered loss in these years based on data from the insurer. The following step will be the estimation of a local (at municipality level at best) expected loss function from extraordinary winds depending on the intensity of the event.